

Trend Study 7-2-01

Study site name: Pinyon Canyon.

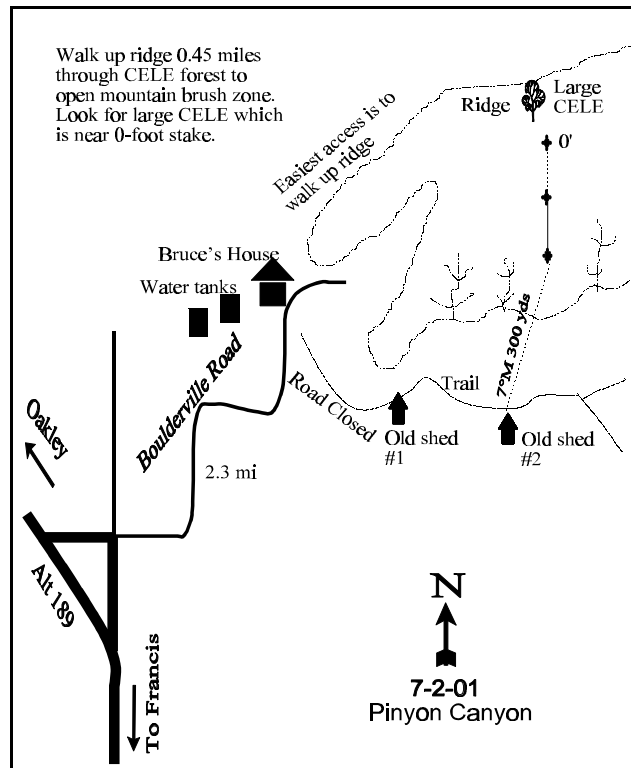
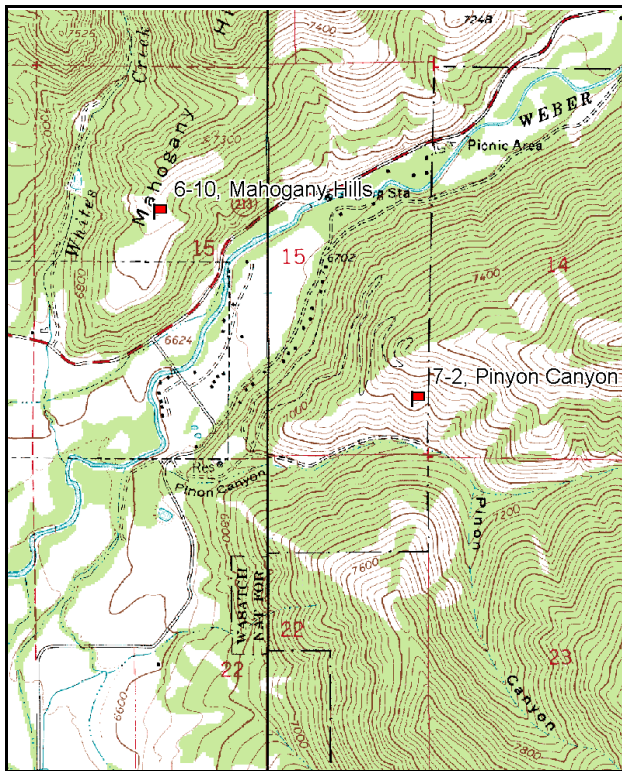
Vegetation type: Mountain Brush.

Compass bearing: frequency baseline 180 degrees magnetic.

Frequency belt placement: Line 1 (11, 59, & 95ft), line 2 (34 & 71ft).

LOCATION DESCRIPTION

Where Highway 189 turns northwest between Kamas and Oakley, proceed north for 0.15 miles. At this intersection turn right (east) onto Boulderville Road and travel 2.8 miles. Turn right onto a dirt road proceeding up Pinyon Canyon to a private home, passing two water storage tanks. Contact landowner before proceeding through private land. From the land owners home, walk up the ridge through a Curlleaf mahogany and pinyon forest for about a half mile. As the forest opens up into a mountain brush vegetation type look for a lone, large Curlleaf mahogany on the southwest facing slope. The 0-foot baseline stake is just below this mahogany. The 0-foot stake is marked by browse tag #7957.



Map Name: Hoyt Peak

Diagrammatic Sketch

Township 1S, Range 6E, Section 15

UTM 4508531 N 479481 E

DISCUSSION

Trend Study No. 7-2

The Pinyon Canyon study is located in a drainage containing one of the better and more important mountain brush big game wintering areas in the herd unit. The study extends up a moderately steep (35-40%), south to southwest-facing slope at an elevation of 7,100 feet. This site is rather high for winter range, but with the favorable aspect and slope, the area remains available to big game during all but the most severe winters. Forage utilization appears moderate to heavy. Pellet group quadrat frequencies have indicated that elk utilize the area about three times more than deer. This is supported by pellet group transect data collected in 2001 which estimated 69 elk days use/acre (170 edu/ha) and 30 deer days use/acre (74 ddu/ha). Several moose pellet groups have also been observed on the site, but occurred outside the sampling area. The mountain brush community in this area exhibits considerable variation in overstory dominance. The mixture of shrubs includes varying densities of true mountain mahogany, serviceberry, mountain big sagebrush, antelope bitterbrush, Gambel oakbrush, mountain snowberry, and a few scattered curlleaf mountain mahogany.

Soils are moderately rocky on the surface and throughout the profile. Surface rock and pavement combine to provide nearly 22% average cover in 2001. Parent material appears to be limestone, sandstone, and shale. In places, the soil has a reddish color, indicating a high iron oxide content. Effective rooting depth was estimated at about 12 inches. This should not be a limiting factor to vegetative growth. Soil texture is classified as a loam with a slightly alkaline soil reaction (7.7 pH). Permeability would be moderately slow when combined with the steep slope and high surface rock cover. There is a moderately high potential for runoff and erosion. Vegetation and litter cover are moderately good. Under most conditions this will help prevent erosion from most high intensity summer rain events. A condition class assessment estimated slight soil erosion in 2001.

The browse component is composed of many species that include true mountain mahogany, mountain snowberry, mountain big sagebrush, antelope bitterbrush, Gambel oak, and Saskatoon serviceberry. The browse component provides one-third of the total vegetation cover on the site in 2001, an increase from 23% in 1996. The preferred species, serviceberry, mountain big sagebrush, and true mountain mahogany have on average a markedly reduced decadence in 1996 and 2001 compared to the 1984 and 1990 readings. The level of use exhibited on these species has been moderate to heavy in most readings, with generally less use in the last readings. Utilization on mountain big sagebrush has shown the most improvement since 1984 when heavy use was estimated at 100%. Currently ('01), use on big sagebrush is light to moderate. Recruitment from young plants has been moderate to high for serviceberry and true mountain mahogany in all samples. Sagebrush recruitment was high in 1996 (37%), but much lower in 2001 at only 7%. In 2001, annual leader growth on serviceberry averaged nearly 4 inches, while mountain mahogany annual leader growth averaged just over 2 inches.

The herbaceous composition consists of an excellent grass cover, dominated primarily by bluebunch wheatgrass. Bluebunch wheatgrass contributed 65% of the grass cover in 1996, but significantly decreased in both frequency and cover in 2001. Sandberg bluegrass is the second most abundant perennial grass on the site, maintaining a stable frequency in 2001. Cheatgrass is also moderately abundant, although in 2001, nested frequency significantly declined with quadrat frequency decreasing from 88% to 73%. These decreases were due to the dry spring of 2001. Forbs occur only occasionally. All forbs combined provide only 9% and 14% of the total vegetation cover on the site in 1996 and 2001 respectively. None of the forbs provide significant amounts of forage or ground cover except for rock goldenrod. Species such as yellow salsify, thistle, and rock goldenrod are typical of rocky soils such as those that occur on this study.

1984 APPARENT TREND ASSESSMENT

Soil condition varies widely and depends on small differences in site quality. Although the entire study area is steep and has a basic south or southwest exposure, there are many smaller slopes where exposures are more westerly or easterly. These micro sites have better vegetative cover and appear less eroded. Erosion is obvious within the shrub interspaces on the remaining area. On this site, soil trend is probably only marginally stable. Vegetative trend also seems stable but may vary slightly. The mountain brush community can be expected to maintain itself. However, composition may change slightly. Species such as Gambel oak can be expected to increase, while more palatable and/or less browsing resistant shrubs such as true mountain mahogany and mountain big sagebrush may decline. Although examination of the data summary indicates a population of Oregon hollygrape composed totally of young plants, it is doubtful that this species is a reliable trend indicator or will ever be important as a forage species.

1990 TREND ASSESSMENT

The moderately steep, southwest facing slope is available to big game in most winters. The true mountain mahogany is heavily to severely hedged. Its density has slightly decreased since 1984. The density of young and mature plants also declined slightly, while decadent mahogany shrubs increased to 36% of the population. Contrasting data was found for the serviceberry population. These palatable shrubs are moderately to heavily hedged but have normal vigor. Density is stable to slightly increasing. The percentage of decadent plants decreased from 65% to 11% of the population. Oregon grape is still the most numerous woody species. In comparison with the 1977 line intercept transect data from the same site, mountain big sagebrush continues on the downward trend that was noted in 1984. The moderately dense grass understory of bluebunch wheatgrass and small bluegrasses is almost unchanged. Sum of nested values for perennial forbs slightly increased. Protective soil cover remains adequate.

TREND ASSESSMENT

soil - stable (3)

browse - slightly down (2)

herbaceous understory - improving slightly (4)

1996 TREND ASSESSMENT

The soil trend for this site has improved, with percent bare ground decreasing to less than 15%. There is good herbaceous understory and litter cover which are well dispersed. The key browse for the site, serviceberry, mountain big sagebrush, and true mountain mahogany, provide 59% of the total browse cover. Overall, there has been a decrease in those plants classified as heavily browsed, vigor has improved, and percent decadence has decreased for all key species. Overall, the trend for browse is improving. The herbaceous understory is improved from 1990, with nested frequency increasing for bluebunch wheatgrass. The trend for cheatgrass should be monitored closely.

TREND ASSESSMENT

soil - slightly improved (4)

browse - slightly improved (4)

herbaceous understory - slightly up (4)

2001 TREND ASSESSMENT

Trend for soil is slightly down. With the drought conditions in 2000 and 2001, vegetation and litter cover both decreased, resulting in increased bare ground (14% to 33%). Trend for browse is stable. Serviceberry,

mountain big sagebrush, and true mountain mahogany have stable densities and low decadence. Use remains moderate to heavy on serviceberry and mountain mahogany, but mostly light on mountain big sagebrush. Trend for the herbaceous understory is stable. Bluebunch wheatgrass decreased in nested frequency, but Sandberg bluegrass increased. Perennial forbs increased in sum of nested frequency although they continue to be in low abundance.

TREND ASSESSMENT

soil - slightly down (2)

browse - stable (3)

herbaceous understory - stable (3)

HERBACEOUS TRENDS --

Herd unit 07 , Study no: 2

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Agropyron dasystachyum	5	-	-	-	2	-	-	-	-	-
G	Agropyron spicatum	_{ab} 275	_a 266	_c 322	_b 286	93	98	99	93	19.45	11.37
G	Bromus tectorum (a)	-	-	_b 274	_a 215	-	-	88	73	6.51	5.66
G	Poa fendleriana	_c 107	_{bc} 65	_{ab} 50	_a 28	46	37	21	13	.67	.60
G	Poa secunda	_a 93	_b 172	_b 175	_b 196	47	73	69	79	3.40	4.27
Total for Annual Grasses		0	0	274	215	0	0	88	73	6.51	5.66
Total for Perennial Grasses		480	503	547	510	188	208	189	185	23.54	16.25
Total for Grasses		480	503	821	725	188	208	277	258	30.05	21.92
F	Agoseris glauca	_a -	_a -	_a -	_b 10	-	-	-	5	-	.05
F	Allium acuminatum	_b 34	_b 37	_a 5	_b 50	18	21	2	28	.01	.25
F	Alyssum alyssoides (a)	-	-	_a 28	_b 64	-	-	12	25	.16	.61
F	Astragalus spp.	-	1	-	2	-	1	-	2	-	.01
F	Balsamorhiza sagittata	3	-	-	-	1	-	-	-	-	-
F	Camelina microcarpa (a)	-	-	_b 117	_a 51	-	-	44	25	.61	.23
F	Calochortus nuttallii	6	3	-	4	3	2	-	3	-	.01
F	Chaenactis douglasii	_b 6	_c 28	_b 13	_a -	2	14	5	-	.05	-
F	Chenopodium fremontii (a)	-	-	-	1	-	-	-	1	-	.00
F	Cirsium undulatum	_b 41	_b 40	_a 9	_a 12	19	20	4	5	.10	.54
F	Comandra pallida	24	21	26	21	8	9	12	9	.23	.31
F	Collinsia parviflora (a)	-	-	-	2	-	-	-	1	-	.00
F	Crepis acuminata	-	3	1	2	-	2	1	1	.03	.03
F	Cymopterus spp.	-	-	2	5	-	-	1	4	.03	.36
F	Descurainia pinnata (a)	-	-	-	7	-	-	-	4	-	.07
F	Epilobium brachycarpum (a)	-	-	-	9	-	-	-	4	-	.02
F	Erigeron pumilus	-	-	2	2	-	-	1	2	.15	.03
F	Erigeron strigosus	-	-	2	-	-	-	1	-	.00	-

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
F	Gayophytum ramosissimum (a)	-	-	6	-	-	-	3	-	.01	-
F	Gilia spp. (a)	-	-	-	4	-	-	-	1	-	.00
F	Helianthus spp.	-	-	7	-	-	-	3	-	.06	-
F	Holosteum umbellatum (a)	-	-	8	8	-	-	3	3	.09	.01
F	Ipomopsis aggregata	-	-	-	2	-	-	-	1	-	.00
F	Lomatium spp.	-	-	1	-	-	-	1	-	.01	-
F	Microsteris gracilis (a)	-	-	a-	b68	-	-	-	29	-	.24
F	Penstemon humilis	14	22	19	11	7	10	9	6	.43	.27
F	Petradoria pumila	ab41	b61	ab38	a34	19	25	15	14	1.62	1.86
F	Phlox longifolia	-	-	1	-	-	-	1	-	.00	-
F	Polygonum douglasii (a)	-	-	3	-	-	-	1	-	.00	-
F	Ranunculus testiculatus (a)	-	-	a8	b47	-	-	5	19	.02	.41
F	Streptanthus cordatus	-	3	-	-	-	1	-	-	-	-
F	Tragopogon dubius	a4	a-	a7	b21	2	-	4	11	.09	.38
F	Unknown forb-perennial	-	2	-	-	-	1	-	-	-	-
F	Viguiera multiflora	2	3	-	5	1	2	-	2	-	.03
F	Zigadenus paniculatus	-	1	-	-	-	1	-	-	-	-
Total for Annual Forbs		0	0	170	261	0	0	68	112	0.91	1.63
Total for Perennial Forbs		175	225	133	181	80	109	60	93	2.84	4.18
Total for Forbs		175	225	303	442	80	109	128	205	3.75	5.82

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 07 , Study no: 2

T y p e	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Amelanchier alnifolia	27	25	1.41	.66
B	Artemisia tridentata vaseyana	17	13	.68	1.86
B	Cercocarpus montanus	35	32	3.99	4.24
B	Chrysothamnus viscidiflorus viscidiflorus	0	0	-	-
B	Gutierrezia sarothrae	3	0	.18	-
B	Mahonia repens	3	4	.15	.24
B	Purshia tridentata	4	3	1.14	1.66
B	Quercus gambelii	1	3	.33	.93
B	Symphoricarpos oreophilus	19	19	2.37	3.75
Total for Browse		109	99	10.26	13.35

BASIC COVER --

Herd unit 07 , Study no: 2

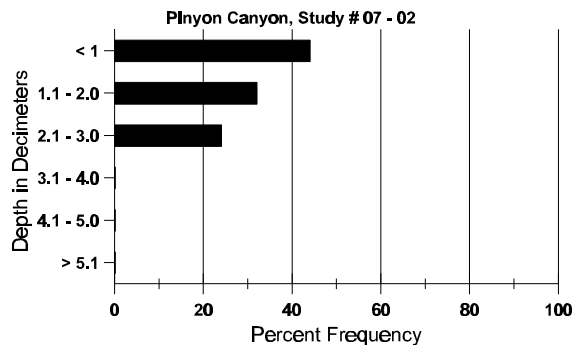
Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	375	346	3.50	9.50	43.43	39.25
Rock	284	296	23.00	25.25	17.19	15.94
Pavement	222	274	8.25	4.00	6.61	5.94
Litter	393	351	45.75	40.00	41.18	30.26
Cryptogams	33	10	1.75	0	.39	.15
Bare Ground	249	310	17.75	21.25	14.82	33.31

SOIL ANALYSIS DATA --

Herd Unit 07, Study no: 02, Pinyon Canyon

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
11.9	60.3 (11.0)	7.7	40.6	32.4	27.0	3.8	8.4	89.6	.8

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 07 , Study no: 2

Type	Quadrat Frequency		Pellet Transect	
	'96	'01	Pellet Groups per Acre 01	Days Use per Acre (ha) 01
Elk	32	43	896	69 (170)
Deer	11	14	392	30 (74)

BROWSE CHARACTERISTICS --

Herd unit 07 , Study no: 2

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Amelanchier alnifolia																		
S	84	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	1	-	2	-	-	-	-	-	-	2	-	1	-	200		3	
	90	4	-	-	2	-	-	2	-	-	8	-	-	-	533		8	
	96	11	10	-	-	-	-	-	-	-	21	-	-	-	420		21	
	01	30	2	-	-	-	-	-	-	-	30	-	2	-	640		32	
M	84	-	1	2	-	-	-	-	-	-	2	-	1	-	200	27	21	
	90	-	3	3	-	-	-	2	-	1	9	-	-	-	600	22	22	
	96	-	7	4	5	8	1	-	-	-	25	-	-	-	500	29	37	
	01	1	8	7	-	2	5	-	-	-	23	-	-	-	460	30	39	
D	84	-	-	11	-	-	-	-	-	-	2	-	7	2	733		11	
	90	-	-	1	-	1	-	-	-	-	2	-	-	-	133		2	
	96	-	-	1	-	-	-	-	-	-	-	-	-	1	20		1	
	01	-	-	1	6	-	1	-	-	-	1	-	-	7	160		8	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		06%			88%			65%			+11%							
'90		21%			26%			00%			-26%							
'96		53%			13%			02%			+25%							
'01		19%			22%			14%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	1133	Dec:	65%			
												'90	1266		11%			
												'96	940		2%			
												'01	1260		13%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	6	1	-	-	-	-	-	-	-	-	7	-	-	-	140	7	
	01	-	-	-	1	-	-	-	-	-	-	1	-	-	-	20	1	
M	84	-	-	1	-	-	-	-	-	-	-	1	-	-	-	66	24 20	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	96	3	4	-	-	1	-	-	-	-	-	8	-	-	-	160	21 31	
	01	8	2	-	1	-	-	-	-	-	-	10	-	1	-	220	22 34	
D	84	-	-	1	-	-	-	-	-	-	-	1	-	-	-	66		
	90	-	1	-	-	-	-	-	-	-	-	1	-	-	-	66		
	96	-	2	-	1	1	-	-	-	-	-	2	-	-	2	80		
	01	2	-	-	-	-	-	-	-	-	-	1	1	-	-	40		
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160		
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120		
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'84			00%			100%			-50%							
		'90			100%			00%			+83%							
		'96			47%			00%			-26%							
		'01			14%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	132	Dec:	50%			
												'90	66		100%			
												'96	380		21%			
												'01	280		14%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total																								
		1	2	3	4	5	6	7	8	9	1	2	3	4																												
Cercocarpus montanus																																										
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0																									
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0																									
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0																									
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1																									
Y	84	7	-	-	-	-	-	-	-	-	7	-	-	-	466		7																									
	90	3	2	-	-	-	-	-	-	-	5	-	-	-	333		5																									
	96	6	3	-	-	1	-	-	-	-	10	-	-	-	200		10																									
	01	5	1	-	-	-	-	-	-	-	6	-	-	-	120		6																									
M	84	-	-	5	-	-	1	-	-	-	6	-	-	-	400	46	28																									
	90	-	-	4	-	-	-	-	-	-	4	-	-	-	266	42	27																									
	96	-	9	12	-	4	3	-	-	-	23	5	-	-	560	34	40																									
	01	1	9	11	-	1	5	-	-	-	26	1	-	-	540	34	37																									
D	84	-	-	3	-	-	-	-	-	-	3	-	-	-	200		3																									
	90	-	-	5	-	-	-	-	-	-	5	-	-	-	333		5																									
	96	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1																									
	01	-	2	3	-	-	-	-	-	-	5	-	-	-	100		5																									
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0																									
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0																									
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1																									
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2																									
<table><tr><td>% Plants Showing</td><td><u>Moderate Use</u></td><td><u>Heavy Use</u></td><td><u>Poor Vigor</u></td><td><u>%Change</u></td></tr><tr><td>'84</td><td>00%</td><td>56%</td><td>00%</td><td>-13%</td></tr><tr><td>'90</td><td>14%</td><td>64%</td><td>00%</td><td>-16%</td></tr><tr><td>'96</td><td>44%</td><td>41%</td><td>00%</td><td>- 3%</td></tr><tr><td>'01</td><td>34%</td><td>50%</td><td>00%</td><td></td></tr></table>																		% Plants Showing	<u>Moderate Use</u>	<u>Heavy Use</u>	<u>Poor Vigor</u>	<u>%Change</u>	'84	00%	56%	00%	-13%	'90	14%	64%	00%	-16%	'96	44%	41%	00%	- 3%	'01	34%	50%	00%	
% Plants Showing	<u>Moderate Use</u>	<u>Heavy Use</u>	<u>Poor Vigor</u>	<u>%Change</u>																																						
'84	00%	56%	00%	-13%																																						
'90	14%	64%	00%	-16%																																						
'96	44%	41%	00%	- 3%																																						
'01	34%	50%	00%																																							
Total Plants/Acre (excluding Dead & Seedlings)													'84	1066	Dec:	19%																										
													'90	932		36%																										
													'96	780		3%																										
													'01	760		13%																										
Chrysothamnus viscidiflorus viscidiflorus																																										
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0																									
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0																									
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14	21																									
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19	27																									
<table><tr><td>% Plants Showing</td><td><u>Moderate Use</u></td><td><u>Heavy Use</u></td><td><u>Poor Vigor</u></td><td><u>%Change</u></td></tr><tr><td>'84</td><td>00%</td><td>00%</td><td>00%</td><td></td></tr><tr><td>'90</td><td>00%</td><td>00%</td><td>00%</td><td></td></tr><tr><td>'96</td><td>00%</td><td>00%</td><td>00%</td><td></td></tr><tr><td>'01</td><td>00%</td><td>00%</td><td>00%</td><td></td></tr></table>																		% Plants Showing	<u>Moderate Use</u>	<u>Heavy Use</u>	<u>Poor Vigor</u>	<u>%Change</u>	'84	00%	00%	00%		'90	00%	00%	00%		'96	00%	00%	00%		'01	00%	00%	00%	
% Plants Showing	<u>Moderate Use</u>	<u>Heavy Use</u>	<u>Poor Vigor</u>	<u>%Change</u>																																						
'84	00%	00%	00%																																							
'90	00%	00%	00%																																							
'96	00%	00%	00%																																							
'01	00%	00%	00%																																							
Total Plants/Acre (excluding Dead & Seedlings)													'84	0	Dec:	-																										
													'90	0		-																										
													'96	0		-																										
													'01	0		-																										

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	7	-	-	-	-	-	-	-	-	7	-	-	-	140	7	10	7
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9	32	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	140		-			
												'01	0		-			
Mahonia repens																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	129	-	-	-	-	-	-	-	-	129	-	-	-	8600			129
	90	72	-	-	-	-	-	-	-	-	72	-	-	-	4800			72
	96	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	83	-	-	-	-	-	2	-	-	85	-	-	-	5666	4	4	85
	96	15	-	-	-	-	-	-	-	-	15	-	-	-	300	4	5	15
	01	34	-	-	-	-	-	-	-	-	34	-	-	-	680	4	6	34
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+18%							
'90		00%			00%			00%			-96%							
'96		00%			00%			00%			+44%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	8600	Dec:	-			
												'90	10466		-			
												'96	380		-			
												'01	680		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	9	3	-	-	-	-	-	-	12	-	-	-	240	19	47	12
	01	-	3	-	-	-	-	-	-	-	3	-	-	-	60	22	84	3
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		75%			25%			00%			-75%							
'01		100%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	240		-			
												'01	60		-			
Quercus gambelii																		
Y	84	6	-	-	-	-	-	-	-	-	6	-	-	-	400			6
	90	8	9	-	-	-	-	1	-	-	18	-	-	-	1200			18
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	2	5	12	-	-	2	-	-	-	21	-	-	-	1400	47	19	21
	90	1	10	-	-	-	-	-	-	-	11	-	-	-	733	43	29	11
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	64	65	0
	01	1	-	-	5	-	-	-	-	-	6	-	-	-	120	58	34	6
D	84	-	-	3	-	-	3	-	-	-	6	-	-	-	400			6
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		15%			61%			00%			-12%							
'90		66%			00%			00%			-99%							
'96		00%			00%			00%			+83%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	2200	Dec:	18%			
												'90	1933		0%			
												'96	20		0%			
												'01	120		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Sambucus cerulea																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	28	66	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'84	0	Dec:	-	
														'90	0		-	
														'96	0		-	
														'01	0		-	
Symphoricarpos oreophilus																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	2	-	-	-	-	-	2	-	-	-	40			2
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	3	-	-	-	-	-	-	-	-	3	-	-	-	200			3
	90	6	-	-	-	-	-	-	-	-	6	-	-	-	400			6
	96	7	-	-	1	-	-	-	-	-	8	-	-	-	160			8
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	2	12	1	-	-	-	-	-	-	15	-	-	-	1000	22	23	15
	90	7	8	-	2	-	-	-	-	-	17	-	-	-	1133	21	26	17
	96	12	8	-	2	-	-	-	-	-	22	-	-	-	440	18	33	22
	01	18	3	-	-	-	-	-	-	-	21	-	-	-	420	20	43	21
D	84	-	3	2	-	-	-	-	-	-	5	-	-	-	333			5
	90	3	6	-	-	-	-	1	-	-	9	-	-	1	666			10
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		65%			13%			00%			+30%							
'90		42%			00%			03%			-73%							
'96		27%			00%			00%			-30%							
'01		14%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'84	1533	Dec:	22%	
														'90	2199		30%	
														'96	600		0%	
														'01	420		0%	